

## **PRACTICAL EXERCISE 1**

### **TITLE PAGE, ABSTRACT, KEYWORDS**

1. Manuscript on “Necrotizing fasciitis”:
  - a. Point out the faults in the title page, including the title.
  - b. Comment on the abstract and keywords.
  - c. Rewrite the abstract and keywords.

Title : Life Threatening Complication of Acupuncture : A case report and review  
of the Literature

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Abstract

Acupuncture is being used for some conditions as an alternative to medication or surgical intervention. Several complications had been reported, and they are generally due to physical injury by the needle or transmission of diseases.<sup>(1-5)</sup> We report a case of life threatening necrotizing fasciitis that developed after acupuncture treatment for osteoarthritis of the knee. Since many old diabetic patients with degenerative joint diseases may consider this mode of treatment, guidelines on cleanliness and sterility of this procedure should be developed and practiced.

Keywords :

Acupuncture, cleanliness, guideline, necrotizing fasciitis, sterility, treatment, wound

## Introduction

Acupuncture is an important component of traditional Chinese medicine. The procedure has been used selectively in the Western countries for management of pain related conditions or behavioral problems such as smoking and overeating. Although most acupuncturists considered the procedure to be non-invasive, it is not free from complications. These included physical injuries due to the acupuncture needles and problems related to wound or systemic infection. Necrotizing fasciitis is a life threatening infection involving the fascia and subcutaneous tissue. We report a case where this condition developed in a patient who had acupuncture treatment for osteoarthritis of the knee.

## Case

A 55 year-old lady who was a known diabetic presented to the emergency department with multiple discharging sinuses over the right knee for a few days. She was being treated for bilateral osteoarthritis of the knees with acupuncture for the past three months. She had her last therapy one week earlier where the procedure was carried out over the anterior aspect of both the knees at multiple sites using a single needle. The needle was heated over a candle before each penetration but the skin was cleaned only with a wet cloth without any disinfectant. Two days later, the right knee became painful and purulent discharge was noticed from the puncture marks.

On physical examination she had low-grade fever with normal blood pressure but was tachycardic. There were 4 sinuses over the swollen right knee and right lower thigh

(Figure 1). No crepitance was noted on palpation and distal pulses were present. There were multiple puncture scars over the left knee with no signs of inflammation (Figure 2).

On admission, the random blood sugar level was 32.8 mmol/L. She was anaemic with Hb of 105 g / L, and total white cell count of  $16.6 \times 10^9 / L$ . The serum sodium level was 132 mmol / L, and blood urea level was 22 mg / dL. Intravenous sulbactam-ampicillin was started and blood sugar level was controlled by insulin infusion. After admission, drainage from the wounds persisted and swelling over the thigh extended to mid-thigh, with slight discoloration of the overlying skin. Diagnosis of necrotizing fasciitis was made clinically and urgent exploration of the wound was arranged. Under general anaesthesia, the whole lower limb was prepared and draped up to the groin. The infection was noted to extend along the plain of deep fascia over the whole anterior aspect of the thigh, with no evidence of subcutaneous gas collection. Two large wounds were created over the medial and lateral surfaces of the thigh after extensive debridement of slough and discoloured skin flaps (Figure 3). The exposed muscle was covered with moist dressing soaked with diluted povidone iodine and changed twice daily. After a few days, further slough developed and a second debridement was carried out. Pseudomonas was cultured from the wound and aminoglycoside was added. Subsequently, her general condition improved and a split skin grafting was performed to cover both the wounds. Patient was discharged 5 weeks after admission and on follow up, the grafted skin was dry and patient was walking without aid.

## Discussion

Physical injuries caused by acupuncture needles include median nerve compression <sup>(1)</sup>, spinal cord irritation <sup>(2)</sup> and pneumothorax <sup>(3)</sup>. Infective complications like spinal infection <sup>(4)</sup> and bacterial endocarditis <sup>(5)</sup> has also been reported. Wound or systemic infections in acupuncture are mostly related to lack of sterility during the administration of therapy. Many acupuncturists who are delivering the service are not medically trained and may not be aware of issues related to sterility. For example, heating the needle before skin puncture may sterilize the instrument but without proper cleaning of the skin this method alone is not adequate.

Necrotizing fasciitis is a dangerous condition with high mortality rate, and more likely to affect people with diabetes mellitus <sup>(6)</sup>. It may be difficult to make a definitive diagnosis of this condition based only on physical findings, and crepitation is not always present. Wall et al <sup>(7)</sup> recommended that white blood cell count of more than  $14 \times 10^9 / L$ , serum sodium level of less than 135 mmol / L and blood urea nitrogen of more than 15 mg / dL on admission helped to differentiate this condition from other types of soft tissue infections that were less aggressive. Frozen section of tissue biopsy under local anaesthesia can also help to establish the diagnosis <sup>(8)</sup>. In our patient, the initial diagnosis was based on physical findings, and results of blood investigations on admission were also supportive of this condition. Early diagnosis, nutritional support and early extensive debridement <sup>(6,9)</sup> remain the standard treatment, while the role of hyperbaric oxygen therapy has not been definitively established <sup>(10)</sup>.

Osteoarthritis is a common condition in the elderly. Concern over complications related to prolonged use of non-steroidal anti-inflammatory drugs and unwillingness to undergo surgery were some of the reasons why patients resort to acupuncture for pain relief.

Without proper preparation of skin and needle, transmission of systemic infection or local wound sepsis is possible. Considering the increasing number of aged population in many countries, we can expect more elderly diabetics with degenerative joint diseases go for acupuncture treatment. Measures should be taken to ensure that practicing acupuncturists have adequate knowledge about normal anatomy and common anatomical variations of sites where acupuncture is to be administered <sup>(11)</sup>. They should also adhere to specific standard of hygiene and are able to identify high risks cases including diabetics and those with internal implants where additional precaution may be necessary.

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#### Legends for illustrations

- Figure 1 : Multiple sinuses over the right knee
- Figure 2 : Multiple puncture scars from acupuncture over the left knee
- Figure 3 : Wound over lateral aspect of right thigh after second debridement.